Tiny Universal DisplayPort Graphics Splitter

Quick Installation Guide

First Edition

www.sunix.com

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Driver & Manual Download :

Please visit SUNIX website http://www.sunix.com by searching keyword "DPU3000" for detail information.

Introduction

SUNIX Tiny Universal Graphics Splitter is an innovative, external multi-display adapter that allows end users to enjoy multiple monitors from Ultra book single digital DisplayPort source. You can make photos and videos bigger and louder by connecting your Notebook PC's to a TV, external display, or projector. For example, you can watch movies on a big screen by connecting SUNIX Tiny Universal Graphics Dongle to an HDTV. With flexible VGA, HDMI, and DisplayPort video output conversions, wide range of converters no longer needed.

SUNIX Tiny Universal Graphics Splitter adopts DisplayPort innovative technology that supports 3 video connections working simultaneously*1. You can expand 3 displays at the same time for gaming, graphics design or spreadsheet analysis; or you can choose to dedicate each monitor to a separate application. With plug-n-play, simplifying configuration, driver free features, SUNIX Tiny Universal Graphics Splitter is a smart solution to video conversion on Microsoft Windows and Linux based computer.

SUNIX Tiny Universal Graphics Splitter compatible with a DisplayPort video card and displays, the graphics expansion. It's requires no driver and software installation for multi-display applications, simplifying configuration and saving time.

Features

- Tiny design integrates DisplayPort, HDMI, and VGA (RGB) connectivity.
- Enables 3 monitors working simultaneously with video mirror or extension mode.*1
- 6 combined monitors up to 5760X2160 by connecting two dongles from dual DP1.2 sources.*2
- Supports digital audio stream over DisplayPort or HDMI output.
- Ideal for multi-display and TV-Wall application.
- Compatible with DisplayPort v1.2a / 1.1a, HDMI v1.4a, VESA DDM, and EDID v1.4 Std.
- Supports DisplayPort link rates of 5.4Gbps (HBR2), 2.7Gbps (HBR) and 1.62Gbps (RBR).
- Supports exceptional Secured Content Protection with HDCP v1.3 for digital content.
- Drivers free under Microsoft Windows.
- Hot Plug & Plug-n-play feature without configuration.
- Certified by CE, FCC, and RoHS approval.

Note:

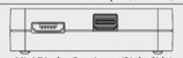
*1 Six combined monitors support by AMD Eyefinity multi-display technology.

*2 For DP 1.2 source, it supports DP1.2 MST multi video/audio steams. For DP 1.1 source, it supports ViewXpand mode.

*3 GPU dependent EDID (Extended Display Identification Data) maximum resolution capabilities may differ based on GPU capability. Output pixel and format options are compatible with VESA standards.

*4 Intel 4th Generation Intel® Core™ Processors (Haswell Platform) supports maximum 3 independent displays working simultaneously, including AIO (All-in-one) or Notebook's display panel itself.

Specification

Model	DPU3000	
Description	Tiny Universal DisplayPort Graphics Splitter	
Interface	DisplayPort™ v1.2 / 1.1a	
Reserve Power Input	USB Micro B +5VDC@500mA	USB Micro B Power Input (Left Side)
Video Input Connectivity	Mini DisplayPort™ Female	 Mini Display Port Input (Right Side)
Video Output Connectivity	1-port HDMI™ Ver1.4 Female	HDMI Output
	1-port DisplayPort™ v1.2, DP++ Female	DP++ Output
	1-port VGA (RGB)	VGA Output
Audio output Connectivity	Digital Audio output over DisplayPort or HDMI connection	
LED	Blue LED indicates DisplayPort source link status	
Resolution Support (Triple monitors)	**DisplayPort1.2 MST source: (multi video/audio streams)** max 2560x1600piex@60Hz each monitor. **DisplayPort 1.1 SST or DisplayPort1.2 SST source:** max 1920x1080piex@60Hz each monitor, 3840x1200piex@60Hz collage-display (ViewXpand mode.) *3 GPU dependent.	
Power Consumption	1.45W @ +3.3VDC DisplayPort Bus Power	
	1-port USB Micro-B port +5VDC in (Reserved)	
Case Material	ABS	
Weight	40g ± 2g (1.5oz)	
Dimensions	70x54x14mm (0.23x0.18x0.05ft)	
Regulatory Approvals	EUR: CE, EN55022 Class B, EN55024, EN61000-3-2, EN61000-3-3 US: FCC Part 15 Class B TAIWAN: BSMI: CNS13438 AS/NZS: C-Tick: CISPR22 JAPAN: VCCI	
O.S. support	Driver Free under Windows XP/2003/Vista/7/8/8.1, 2008/2012, (32/64-bit)	
Environment	Operation temp. 0 °C ~ 40 °C (32-104°F) Operation humidity: < 85% non-condensing Storage temp. -10 °C ~ 85 °C (14~176°F)	

Package Checklist

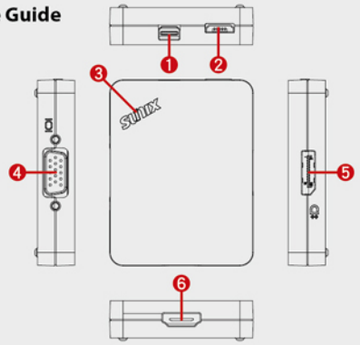
Check if the following items are present and in good condition upon opening your package. Contact your retailer if any of the items is damaged or missing.

1. Tiny Universal Graphics Splitter x1
2. Quick Installation Guide
3. DisplayPort Male to Mini-DisplayPort Male cable 100mm (4.0 ft.) x 1 (Optional)
4. Mini-DisplayPort Male to Mini-DisplayPort Male cable 100mm (4.0 ft.) x 1 (Optional)

System Requirements

1. Intel PC base computer with least one available DisplayPort
2. Monitors with DisplayPort, HDMI or VGA connections.

Hardware Guide



① DisplayPort Input : Connecting to PC graphics source.
② USB Micro B type external power Input : Connecting to external power source.
When you are not using enclosed cable or graphics output source is not enough, be sure to connect external +5VDC power from AC/DC Adapter or power cable from PC USB port.
③ LED Indicator :

	GOOD : The Blue Indicator LED = ON ; working normally
	BAD : The Blue Indicator LED = DIM ; the DisplayPort power output is insufficient on this port BAD : The Blue Indicator LED = FLASH ; the graphics card is not working properly

④ VGA graphics output : Connecting with VGA enable monitor.
⑤ DisplayPort graphics output : Connecting with DisplayPort enable monitor.
⑥ HDMI graphics output : Connecting with HDMI enable monitor.

Hardware Installation

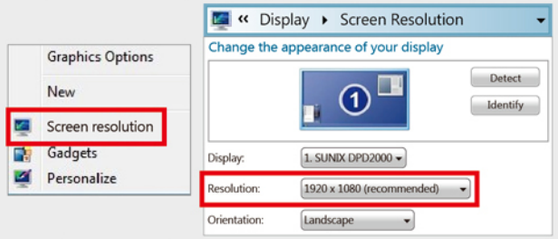
Follow the steps description how to install DisplayPort graphics splitter. It is recommended that monitors of the same size and resolution are used for the connection. Same type monitor means the monitors have the same native resolution and display refresh rate.

Step 1: Connecting graphics splitter, DisplayPort input with cable to graphics source, such as Desktop or Notebook PC DisplayPort graphics output connector.
Step 2: Connecting graphics splitter DisplayPort, HDMI or VGA output to monitor. Maximum connection: 3 difference type interface monitor.
Step 3: Power on PC and monitors. Select monitors' to correct input source.
Step 4: To change the display to clone mode, change the output display resolution on your computer.

After installation, you will see the same image on all monitors (clone mode) or a single image spread across multiple monitors. To change the display setting, simply change the graphic card output resolution via the Display Properties page.

Display Setting

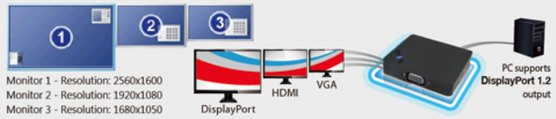
User can set mirror or extension mode via Windows display resolution setting. Right click your mouse on the desktop and select "scree resolution". Here is the example when using two 1920x1080 Full HD standard displays with single Tiny Universal DisplayPort Graphics Splitter.



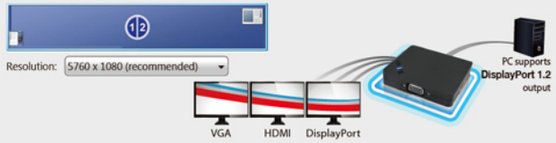
Note: Under DP1.1 SST mode environment, when display resolution is greater than 1920x1080 (1920x1200) pixels, Tiny Universal DisplayPort Graphics Splitter runs "Extension" mode, such as 3840x1080 (3840x1200) pixels. When display resolution is equal or lesser than 1920x1080 pixels (1920x1200), DisplayPort graphics splitter runs "Mirror" mode.

DP1.2 MST Mode

DP1.2 MST Mode with Multiple Display



DP1.2 MST Mode with Collage display



DP1.1 SST Mode

Note:
* Display architecture based on Intel 4th Generation Intel® Core™ Processors (Haswell Platform).
* Intel 3rd Generation Intel® Core™ Processors (IVY bridge Platform) supports DP1.1 SST mode only.

Troubleshooting

Question 1:
I am not able to set these modes; Multi-Stream Transport (MST) or Single-Stream Transport (SST) mode.

Solution:
1. Please check if your DisplayPort output port is DisplayPort 1.1 or 1.2 specifications. Since, Multi-Stream Transport mode only available on DisplayPort 1.2 specification or later.
2. Please contact your graphics card manufacturer for more details.

Question 2:
There are no audio output through the DisplayPort graphics splitter.

Solution:
1. The DisplayPort graphics splitter supports digital audio stream over standard DisplayPort or HDMI ports. Please select audio output at Control Panel > Sound > Playback setting.
2. Digital audio stream will only accept one (1) monitor for audio output at a time.

Question 3:
When using video dongle converter; such as, HDMI-to-VGA or DisplayPort-to-VGA adapter, with the DisplayPort graphics splitter. There are no display on the monitor, and the blue indicator LED is OFF.

Solution:
1. Please use the enclosed cable for the connection, and make sure all connections are secured. The cable used for the connection must meet DisplayPort standard specification.
2. The graphics card port might not able to provide sufficient power to the DisplayPort splitter. You will need to provide external power to the DisplayPort if this is the case. Please connect a +5VDC power source. You may use a standalone AC/DC power adapter or simply using a standard USB Type-A to Micro-USB Type-B cable connection to the computer or power adapter.

Question 4:
There are no display when connecting the DisplayPort graphics splitter to my monitors.

Solution:
1. Please use the enclosed cable for the connection. If connection has been established, the blue indicator LED light should be ON. If there are still no display on the monitor, and the blue LED light is not ON. Please make sure the cable that you are using meet DisplayPort standard specification.
2. If the blue indicator LED light is dim, there might be insufficient power from the DisplayPort source. Please connect external +5VDC power from AC/DC Adapter or PC USB port over reserved USB Micro B connector.
3. If the blue indicator LED flashes, the unit is not fully functioning. Please "Restart" the computer, and "Un-Plug" then "Re-Plug" the connection with this DisplayPort splitter. If problems still persist, please contact the graphics card manufacturer for an updated software drivers for this graphics card.
4. There might be multiple display output ports on your computer; such as, VGA, DVI, HDMI or DisplayPort. Please make sure you have set the primary output (at the BIOS) to DisplayPort for our graphics splitter.

SUNIX	GOOD：The Blue Indicator LED = ON ; working normally
SUNIX	BAD ： The Blue Indicator LED = DIM ; the DisplayPort power output is insufficient on this port BAD ： The Blue Indicator LED = FLASH ; the graphics card is not working properly

Question 5:
How many monitors can I connect to the DisplayPort graphics splitter and what are the maximum supported resolutions?

Solution:
1. Basically, it will depend on your graphics card maximum bandwidth display frame rate and supported resolutions. For example, high-end AMD/ATI graphics card can support up to six (6) monitors with maximum resolution at 5760 x 2160 with the use of two (2) DisplayPort graphics splitters (*with DisplayPort 1.2 specification source).
2. Please contact your graphics card manufacturer for more details information on such limitation and supported specifications.
3. For Intel Haswell chipset graphics platform, please see below supported information*4:

Display Resolution (60 frames per second refresh rate)	Maximum Number of Monitors based on DisplayPort 1.2 Bandwidth
1680 x 1050 (WSXGA)	5
1920 x 1080 (1080p) or 1920 x 1200	4
2560 x 1600 (WQXGA)	2
3840 x 2160 (UltraHD, 4K) or 4096 x 2160 (4K x 2K)	1

Question 6:
The computer desktop display does not stretched across to multiple monitors.

Solution:
1. There may be other display outputs on your computer, and its display setting has set to "Clone Mode". In clone mode, the highest resolution is limited by the maximum capability of the primary display.
2. Please change the port that you have connected the DisplayPort graphics splitter to, and make sure the DisplayPort output is active.
3. Please set the DisplayPort graphics splitter as "Primary Display". If problems still persist, please contact the graphics card manufacturer for more details on how to change and set primary display, and possible with an updated software drivers.

Question 7:
The monitor screen image/display is garbled or unstable on one of the monitor (such as, blank screen, rolling or overlapping screen images).

Solution:
1. These monitors may be different brands and models, and have different supported resolution and refresh rate modes under the DisplayPort 1.1 standard interface.
2. Please try to set all monitors with the same resolution, or uses identical brand/model monitors.

Regulatory Compliance

FCC Conditions

This equipment has been tested and found to comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received. Including interference that may cause undesired operation.

Important! Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment. Use an approved phone set.

CE

This equipment is in compliance with the requirements of the following regulations:
EN 55022: CLASS B

WEEE Information

For EU (European Union) member users: According to the WEEE (Waste electrical and electronic equipment) Directive, do not dispose of this product as household waste or commercial waste. Waste electrical and electronic equipment should be appropriately collected and recycled as required by practices established for your country. For information on recycling of this product, please contact your local authorities, your household waste disposal service or the shop where you purchased the product.

Contact Information

Customer satisfaction is our number one concern, and to ensure that customers receive the full benefit of our products, SUNIX services has been set up to provide technical support, driver updates, product information, and user's manual updates.

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